UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,918	12/09/2003	Francesco Grilli	000350D1	5799

23696 7590 07/12/2007
QUALCOMM INCORPORATED
5775 MOREHOUSE DR.
SAN DIEGO, CA 92121

EXAMINER	
ODOM, CURTIS B	
ART UNIT	**PAPER NUMBER**
2611	

NOTIFICATION DATE	DELIVERY MODE
07/12/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

us-docketing@qualcomm.com
kascanla@qualcomm.com
nanm@qualcomm.com

Office Action Summary	Application No.	Applicant(s)	
	10/731,918	GRILLI ET AL.	
	Examiner	Art Unit	
	Curtis B. Odom	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *4/26/2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *5-8* is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Remarks, filed 4/26/2007, with respect to the rejection(s) of claim(s) 1-4 under 35 U.S.C 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Papasakellariou et al. (U. S. Patent No. 6, 275, 483) as shown below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor (previously cited in Office Action 1/26/2007) in view of Papasakellariou et al. (U. S. Patent No. 6, 275, 483).

Regarding claim 1, Taylor discloses a remote terminal in a communication system (see Fig. 1), comprising:

a first receiver (Fig. 1, block 24, column 4, lines 26-30) operative to receive and process, a received signal; and

a rake receiver coupled to the first receiver and operative to receive and process the received signal, wherein the rake receiver (see Fig. 1, block 28) includes a plurality of finger processors (see Fig. 1, elements 44-1-4, see column 4, lines 26-37), wherein a first set of one or more finger processors (elements 44-2-4) is assigned to a first set of one or more base stations (base station 14) in active communication (in an active set) with the remote terminal (as described in column 5, lines 6-18), wherein a second set of one or more finger processors (element 44-1) is assigned to a second set of one or more base stations (base station 16) not in active communication (in active set) with the remote terminal (see column 5, lines 40-49). However, Taylor does not disclose the rake receiver is operative to provide time measurements indicative of times of arrival of transmissions received at the remote terminal from a plurality of base station, wherein finger processors assigned to base stations in the first and second sets are operative to perform the time measurements on the transmissions received from the base stations.

However, Papasakellariou et al. discloses a rake receiver (see column 2, lines 26-37) in including rake fingers which provide time measurements indicative of times of arrival of transmissions received at the remote terminal from a plurality of different base stations (see column 2, lines 40-62), wherein the rake fingers are assigned to demodulate signals from the different base stations (paths) as described in column 2, lines 26-31. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the receiver of Taylor to measure time of arrivals of multiple base station signals as disclosed by

Papasakellariou et al. since Papasakellariou et al. states this method allows for fast identification of pilot paths originating from any transmitting base station (see column 1, lines 12-16).

Regarding claim 2, Papasakellariou et al. discloses the identifying the arrival time of each signal by demodulation (see column 2, lines 57-67), wherein the demodulation takes place in the same time instance using rake fingers (see column 2, lines 26-31). It would have been obvious to include this feature since Papasakellariou et al. states this method allows for fast identification of pilot paths originating from any transmitting base station (see column 1, lines 12-16).

Regarding claim 4, Papasakellariou et al. discloses the time of arrival measurements are based on transmissions on a particular frequency band by different base stations as described in column 1, lines 21-26). It would have been obvious to include this feature since Papasakellariou et al. states this method allows for fast identification of pilot paths originating from any transmitting base station (see column 1, lines 12-16).

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor (previously cited in Office Action 1/26/2007) in view of Papasakellariou et al. (U. S. Patent No. 6, 275, 483) as applied to claim 1, and in further view of La Rosa (previously cited in Office Action 1/26/2007).

Regarding claim 3, Taylor and Papasakellariou et al. do not disclose the arrival time measurement is based on an earliest arriving multipath received for the base station.

However, La Rosa discloses a rake receiver (see Fig. 1) comprising of an ADC (see Fig. 1, block 110) for producing samples (rays) and fingers which include time tracking circuits for controlling the time position of the finger in accordance with the time positions of a received ray (from a base station), see column 7, lines 6-16). The tracking circuit determines the arrival time

position of the ray and adjusts the finger based on whether the ray was received early or late (see column 7, line 64-column 8, line 9). La Rosa further discloses by comparing the time positions of two fingers, the time separation between two arriving rays is known (see column 7, lines 61-63). La Rosa further discloses the time tracking for each ray is based on the first received multipath ray assigned to the first finger (see column 4, lines 35-55). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the fingers of Taylor and Papasakellariou et al. to track the timing of rays based on the first received multipath ray as disclosed by La Rosa since La Rosa states this method (time tracking) exploits channel diversity (see column 11, lines 7-11).

Allowable Subject Matter

5. Claims 5-8 are allowable over prior art references.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 571-272-3046. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Curtis Odom
July 8, 2007